



JSTSB - 556 - VS - B

[Name of Document] SPECIFICATION

[Title of the Invention] SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME

[Claim for a Patent]

[Claim 1] A semiconductor device, comprising at least:
a semiconductor region;
a boron-doped phosphorus silicate glass (BPSG) film formed over the semiconductor region; and
an oxide film containing nitrogen formed between the semiconductor region and the boron-doped phosphorus silicate glass film.

[Claim 2] The semiconductor device according to claim 1, having a maximum value that a nitrogen concentration distribution in a thickness direction of the oxide film is set to a maximum value.

[Claim 3] A method for manufacturing a semiconductor device, comprising at least the steps of:
forming an oxide film containing nitrogen over a semiconductor region;
forming a boron-doped phosphorus silicate glass film over the oxide film; and
heat-treating the boron-doped phosphorus silicate glass film in an oxidizing atmosphere.

[Claim 4] A method for manufacturing a semiconductor device according to claim 3, wherein a dinitrogen monoxide (N₂O) gas or a nitric monoxide (NO) gas is used in the step of forming the oxide film.

[Detailed Description of the Invention]